REMARKS

Claims 1-6 and 9-20 are pending in the subject application with claims 1 and 9 in independent form. Claims 7 and 8 were previously canceled. No claims are amended, withdrawn or canceled in this Response. As such, no new matter has been added in this Response.

Claim Rejections - 35 USC §103

Claims 1-6 and 9-20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the three-way combination of U.S. Pat. No. 4,515,884 to Field et al. (hereinafter "Field") in view of U.S. Pat. No. 5,869,188 to Priebe et al. (hereinafter "Priebe"), and also U.S. Pat. Appl. Publ. No. 2002/0146575 to Shudo et al. (hereinafter "Shudo"). The Applicants respectfully traverse these rejections. Specifically, in view of the arguments herein, and further in view of the Declaration included herewith, the instant rejections are now overcome.

To support this traversal, the Applicants first direct the Examiner to the Declaration Under 37 CFR § 1.132, which is filed herewith. The Declaration has been executed by one of the inventors, Hiroaki Yoshida, who is one highly skilled in the siloxane art, including siloxane polymers, components thereof, processes for producing siloxane polymers, and compositions including siloxane polymers (see Paragraphs 2-3 of Declaration). Considering the clarifying impact of the Declaration, it is clear that present invention, as claimed, is patentably distinguishable from the disclosure and teachings of the Field, Priebe, and Shudo, either alone, or in combination. Specifically, the Applicants submit that one skilled in the art would not be motivated to combine the teachings of Field with the teachings of Priebe, with the

teachings of Shudo, or with the teachings of both Priebe and Shudo. In addition, the present invention has new and unexpected results.

The teachings of Field and Shudo (or lack thereof) were described in detail in the prior Responses already of record. As such, only certain aspects of the prior art are emphasized herein merely for the sake of brevity. In doing so, the Applicants do not concede to any of the Examiner's prior arguments, especially with regard to the previous teaching away arguments and new and unexpected results of the present invention previously established by the Applicants.

In the instant Office Action, the Examiner continues to rely on Field's disclosure of a fuser member comprising a layer of vulcanized silicone rubber containing thermoconductive particles. However, the Examiner admits that the host matrix of Field is a condensation-curable silicone rubber, as opposed to the presently claimed hydrosilylation-curable silicone (which may also be referred to in the art as an addition-curable silicone). To address this deficiency of Field, the Examiner relies on Field's broad "teachings" (at the bottom of column 8 of Field) in an attempt to establish that "other" silicones may be used, and then relies on Priebe to suggest that hydrosilylation/addition-curable silicone rubbers are equivalent to condensation-curable silicone rubbers, and are known to be used in a similar capacity, i.e., are generally regarded as being equivalent hosts into which conductive particles are incorporated. Finally, the Examiner relies on Shudo, and contends that Shudo confirms that it is known to incorporate cerium oxide in fuser members. The Applicants must respectfully disagree with the Examiner's assertions.

As described above, Field utilizes condensation-curable silicone rubbers. Similar to the Applicants' prior Response, the Applicants must again respectfully assert that condensation-curable silicones (e.g. condensation type room-temperature vulcanization (RTV) silicones) and hydrosilylation/addition-curable silicones are not equivalent hosts. While Field briefly mentions "other" silicone rubbers, it is still abundantly clear that one skilled in the art would be directed to use condensation-curable silicone compositions.

Paragraphs 8 and 9 of the Declaration support this position that the different cure systems are not equivalent. First, the "other" silicone rubbers of Field merely refer to different vulcanization methods, not to different cure systems. In addition, Field is completely focused on use of condensation-curable silicone compositions, based on use of, and extensive description of, tin-based catalysts. Because of the contrasting teachings of Field and Priebe (described immediately below), and as established in the Declaration in Paragraphs 9 through 15, one skilled in the art would not be motivated to combine their respective teachings in the manner asserted by the Examiner.

With regard to Priebe, one skilled in the art referring to Priebe's teachings would not conclude that hydrosilylation-curable and condensation-curable silicone rubbers are equivalent hosts. Instead, it is clear that Priebe would direct one to use hydrosilylation-curable silicone rubbers based, *inter alia*, on the "preferred" language utilized by Priebe, as well as with reference to Priebe's extensive number of examples using its preferred type of hydrosilylation-curable compositions (i.e., Examples 1-30 employing SILASTIC-J RTV elastomer from Dow Corning).

While Priebe may describe use of either condensation-curable or addition-curable compositions, it is still important to appreciate what one skilled in the art would gather from not only the express teachings of Priebe itself, but also from that person's inherent knowledge of the art, like the interpretations and general knowledge attested to in the Declaration. For example, as is made clear immediately below, one skilled in the art would appreciate that silicone rubbers formed from either condensation-curable or addition-curable compositions have drastic chemical and physical differences, and those differences are especially noticeable based on end applications of those silicone rubbers.

Referring to page 582 of the **Appendix A** attached herewith, and as established in Paragraph 9 of the Declaration, it is known in the art that condensation reactions are reversible, and because of this, condensation-cured silicone rubbers typically have poorer heat resistance relative to hydrosilylation-cured silicone rubbers. As taught in **Appendix A**, with regard to materials formed via condensation reactions, "… if these materials are heated in a confined space they can lose their physical properties and in extreme cases can revert to free-flowing liquids. This reversion effect is due to the interaction of the tin catalyst and the residual alcohol in the cured elastomer. The presence of these two chemicals enables a reversal of the curing mechanism to occur leading to reduction in the molecular weight of the polymer by reaction with the alcohol…" This concept is clearly supported by Paragraph 9 of the Declaration.

Based on this general understanding in the art, it is clear that if a condensation-cured silicone rubber were to be covered or sandwiched by a substrate (i.e., "a confined space"), such as with a coating of fluororesin or fluororubber in an end application, the reversion problem would only be exacerbated because the residual alcohol could not escape from the silicone

rubber. As such, the residual alcohol would only propagate the reversion reaction further based on its ongoing presence in the silicone rubber as the silicone rubber is heated. As temperature increases, the reversion only becomes worse. As reversion proceeds, the silicone rubber breaks down.

The teachings of Field imply some of this understanding, where a maximum temperature of 385° F is applied to a coated fuser roll (column 12, line 27). This temperature is much lower than the temperatures reached in the rolls of the present invention, which reach 230° C, i.e., or 446° F (as illustrated in the examples of the subject application). As described in the subject application, much higher temperatures are reached during utilization of the present invention, relative to those reached by the compositions of Field. Because of the reversion issues associated with condensation-cure systems, the Applicants respectfully assert that one skilled in the art would not refer to the teachings of Field in view of the teachings of Priebe or vice-versa. Specifically, one skilled in the art would be directed away from the teachings of Field based on Field's reliance on condensation-cure compositions which would suffer from the exacerbated reversion problems at higher temperatures. Paragraphs 9 through 11 of the Declaration establish this position. Referring to the Examiner's concerns on page 6 of the instant Office Action, the arguments herein, especially in light of the Declaration, should make clear that addition-curable silicones are typically superior over condensation-curable silicones for certain applications (or end applications) such as in higher temperature environment fuser rolls.

Even if the Examiner continues to remain unconvinced with the distinction in the type of silicone rubber claimed relative to those of the prior art, e.g. those of Field, the present invention

provides new and unexpected results as described in detail in the Applicants' last Response, and as illustrated in the subject application. In addition, Paragraphs 15 through 17 of the Declaration further establish this position. With respect to the present invention, one of skill in the art would have no reason whatsoever to expect the excellent physical properties obtained from compositions including claimed Components (A)-(F), especially in view of the fact that utilizing iron oxide micropowder but not cerium oxide micropowder, or vice versa, resulted in undesirable properties (as exemplified by Comparative Examples 2 and 3 relative to Examples 1-5 in the subject application).

Referring to the Examiner's concerns on pages 7 and 8 of the instant Office Action regarding multiple variables between the examples, the Applicants clarify that the amounts are maintained to ensure consistent loading of the powders, as established in Paragraph 16 of the Declaration. If the loading is not maintained in this fashion, then other variables would change, e.g. viscosity, solids content, etc. The Applicants must respectfully submit that the inventive and comparative examples of record, and supported by the Declaration, provide ample evidence of the new and unexpected results of the claimed subject invention.

Conclusions

In view of the foregoing, and especially in view of the Declaration filed herewith, the Applicants respectfully submit that independent claims 1 and 9, as well as claims 2-6 and 10-20 which depend from independent claims 1 and 9, respectively, are both novel and non-obvious over the prior art, including over Field, Priebe, and Shudo, either individually or in combination. As such, the Applicants submit that the claims are in condition for allowance, and such allowance is respectfully requested.

This Response is submitted along with the proper fee for a three-month extension of time; thus, it is believed that no additional fees are due. However, if necessary, the Commissioner is authorized to charge Deposit Account No. 08-2789 in the name of Howard & Howard Attorneys PLLC for any additional fees or to credit the account for any overpayment.

Respectfully submitted,
HOWARD & HOWARD ATTORNEYS PLLC

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Date

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